

CLAIMS:

WHAT IS CLAIMED IS:

1. An apparatus for continuously providing dampening fluid to a rotating plate cylinder of a lithographic printing press comprising:

5 (a) a frame operatively connected to said printing press;

(b) a dampening fluid reservoir;

(c) a pan roller rotatably mounted in said frame and disposed in contact with dampening fluid in said dampening fluid reservoir;

10 (d) a transfer roller means tangentially contacting and parallel to said pan roller;

(e) an ink receptive oscillating roller tangentially contacting and parallel to said transfer roller means, said oscillating roller gear driven in rotation at a surface speed proportional to a surface speed of said rotating plate cylinder;

15 (f) a water form roller rotatably mounted in said frame tangentially contacting and in a parallel relation to both said plate cylinder and said ink receptive oscillating roller for carrying an even metered layer of water from said oscillating roller to said plate cylinder.

2. An apparatus as in claim 1 wherein said ink receptive oscillating roller further comprises a polymeric surface.

3. An apparatus as in claim 1 wherein each of said pan roller and transfer roller and water form roller have ink receptive polymeric surfaces.

4. An apparatus as in claim 1 wherein said transfer roller means comprises:

(a) a transfer roller contacting said pan roller; and

5 (b) a reverse direction roller contacting said transfer roller and said oscillating roller.

5. An apparatus as in claim 1 wherein said pan roller further comprises a roller which is gear driven in rotation at a surface speed proportional to said surface speed of said rotating plate cylinder.

6. An improved oscillating roller for use in a fluid dampening system of a lithographic press comprising:

- 5 (a) a rotatable ink receptive exterior cylindrical surface;
- (b) a drive gear operatively connected to said oscillating roller for directly driving said rotatable exterior cylindrical surface at a rotation speed proportional to a surface speed of a rotating plate cylinder of said lithographic press; and
- 10 (c) an external oscillating mechanism operatively connected to said oscillating roller for driving said rotatable ink receptive exterior surface thereof with oscillating axially linear motion while said ink receptive exterior cylindrical surface is also being rotated by said drive gear.
- 15

7. An improved gear driven continuous fluid dampening system of the type having tangentially contacting and parallel cylindrical rotatable rollers held in a frame and having a dampening fluid pan, a pan roller positioned for receiving dampening fluid from said fluid pan, a transfer roller positioned for receiving dampening fluid from said pan roller, a reverse direction roller for receiving dampening fluid from said transfer roller an oscillating roller positioned for receiving dampening fluid from said reverse direction transfer roller, and a form roller for receiving dampening fluid from said oscillating roller and for providing said dampening fluid to a rotating plate cylinder of a lithographic printing press, the improvement comprising:
- 15 (a) an ink receptive surface on said oscillating roller;
- (b) a gear train driving said oscillating roller for rotation thereof at speeds directly proportional to said rotation of said plate cylinder; and
- 20 (c) means for selectively applying desired rolling contact forces between both said oscillating roller and said transfer roller and between said oscillating roller and said form roller.

8. An improved fluid dampening system as in claim 7 wherein said ink receptive surface of said oscillating roller comprises a smooth polymeric material.

9. An improved fluid dampening system as in claim 8 wherein said smooth polymeric material is rubber.

10. An improved fluid dampening system as in claim 8 wherein said smooth polymeric material is nylon.

11. An improved fluid dampening system as in claim 7 wherein said ink receptive surface on said oscillating roller is formed by etching an existing metallic surface.

12. A kit for retrofitting an existing lithographic printing press with a dampening system which continuously provides dampening fluid with improved metering capabilities, said retrofitting kit comprising:

- 5 (a) a replacement gear driven oscillating roller with an ink receptive cylindrical surface; and
- 10 (b) a replacement pan roller, transfer roller, and reverse direction roller set including means for adjusting contact pressure between said pan roller and said transfer roller of said set and between said reverse direction roller of said set and said oscillating roller.

13. A method of retrofitting an existing lithographic printing press with a dampening system which continuously provides dampening fluid with improved metering capabilities, comprising the steps of:

- 5 (a) replacing an existing metallic or chrome plated gear driven oscillating roller with an ink receptive gear driven oscillating roller; and
- 10 (b) replacing existing pan and transfer rollers with a pan and transfer roller set including means for adjusting contact pressure between a pan roller and a transfer roller of said replaced set and between a reverse direction roller of said replacement set and said ink receptive gear driven oscillating roller.